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13 January 1967

MEMORANDUM TO: ~~25X1A6a~~ Director of Planning, Programming and Budgeting
ATTENTION : [REDACTED] Information Processing Staff
SUBJECT : Brief Description of Selected ADP Applications
in Cartography

1. The following is a brief description of selected automated applications in cartography requested by your Office on 12 January 1967. Both exhibits will be available when required.

2. Selected ADP Applications in Cartography

The cartographers of the Office of Basic Intelligence and the scientific programmers of the Office of Computer Services have jointly engaged in automating the art of map making since 1964. This close coordination was responsible for the early nomographs and the design and evolution of the Automap System, both of which will be described. While certain economies have been achieved, the most significant benefits of the effort are the expanded cartographic product range now possible and the speed with which it can be achieved.

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a. A nomograph is a graphic representation of a mathematical relationship. Exhibit A is an example of a nomograph used for [REDACTED] Variables of range, elevation, and azimuth are expressed on the map in relation to each other. This development eliminated the need for a computer at the tracking station. An earlier project that pioneered the nomograph has earned its creators an Agency nomination for a Presidential Citation.

b. The Automap System incorporated much of the earlier nomograph work and became operational in 1966. Its stated purpose is to automatically produce on demand maps or overlays of existing maps of any portion of the earth's surface, at any scale, using any projection within certain limitations. A large data base of coastlines, boundaries, cities, and other features expressed in geographic coordinates has been recorded and stored in digital form. This file is used in conjunction with the projection, frame, and scale selected. Many options such as grids, azimuths, range circles, and different output devices may be specified.

Exhibit B is an azimuthal equidistant projection centered on Moscow. It has the virtue that all azimuths and distances are true from the center. Such maps are in great demand for strategic purposes. However, each center had to be recomputed, formerly a lengthy task. Today, using the computer and automatic plotter, months can be reduced to hours. This particular

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map was completed (exclusive of type) three hours after the initial request.

Proposed Exhibits:

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A. [REDACTED]

B. Azimuthal Equidistant Projection Centered on Moscow

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[REDACTED]
OBI Information Processing Coordinator

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